

## Beating the Heat

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**A**lthough we're still experiencing the occasional chilly morning here at Fort Rucker, Ala., that hasn't stopped the U.S. Army Combat Readiness Center from preparing for the hot summer months ahead. It's now common for our Soldiers deployed all over the world to experience extreme temperature changes and work climates on a daily basis, not just in the usual summer months. The bottom line is we must stay ready for heat, cold and altitude changes throughout the year to protect Soldiers from unnecessary injuries.

Heat information has been force-fed to us throughout our careers, so I'm amazed how many heat-related injuries still occur. Despite commanders and leaders being engaged in all aspects of their Soldiers' preparedness, we still had numerous heat injuries reported in fiscal 2006. There are many underlying factors that contribute to heat injuries besides just performing strenuous work in a hot environment. A Soldier's overall physical condition, illness, hydration, fatigue, medications, alcohol, caffeine, energy drinks, excessive weight, enclosed environments such as helicopter cockpits or vehicle interiors, humidity and wind all can contribute to heat injuries.

Leaders and Soldiers must do more than just have water available. Using Composite Risk Management to assess and mitigate the potential health effects Soldiers might suffer during hot weather is critical. Here's how the five steps of CRM should be applied to reduce heat casualties.

### 1. Identify hazards: HEAT

- High heat category
- Exertion level of activity
- Acclimatization (don't forget altitude)
- Time (length of activity and time of day)

### 2. Assess hazards

- Ambient temperatures (i.e., a heat category assessment using wet bulb globe temperature should be conducted and adjusted for temperature variance)
- Know your Soldiers (e.g., their hydration status, risk factors or certain medications that might increase risk)

### 3. Develop controls

- Education: Establish standing operating procedures and train as you'll fight
- Planning: Develop a plan to have ample hydration sources available based on activity levels and provide rest cycles as needed
- Identification: Identify and note previous heat casualties along with current illnesses
- Develop a hydration monitoring system. Use current guidelines; Soldiers should hydrate continuously to produce urine that's clear to very light yellow in color

### 4. Implement controls

- Ensure risk decisions are made at the appropriate level
- Ensure controls are implemented
- Enforce and monitor the hydration standard
- Execute random checks
- Follow clothing and equipment recommendations

### 5. Supervise and evaluate

- Enforce SOPs through constant monitoring and frequent walk-throughs
- Conduct spot checks
- Develop contingency plans for injuries that might occur despite preventive measures
- Continually re-evaluate the situation and adjust controls as needed

Heat injury casualties continue to remain highest at our basic and advanced individual training posts. There are many reasons for this, including most training posts are located in southern states with high summer temperatures. Many new recruits aren't acclimated to these hot environments or physically conditioned for the increased intensity of military

training. Illnesses are more frequent in crowded conditions, and trainees get minimal sleep due to their hectic training schedules. These units also know how, when and what to report to both the medical community and the USACRC. Still, with all these issues seemingly working against us, units do succeed and most Soldiers graduate without injury.

To help ensure their Soldiers' safety, leaders must stay engaged and be held accountable for their actions or, sometimes, inaction. Soldiers also have a responsibility to look out for each other and speak up if a comrade is in trouble. Someone always knows when a Soldier isn't at his peak performance level; buddies should make leaders aware of these situations to thwart a possible heat injury. Telling isn't a sign of being weak. It's being responsible and keeping our Soldiers in the fight.

Leaders, please use all the resources available to you and your Soldiers as we enter the hot summer months. Take a big-picture look at all the factors that can take a Soldier out of the fight, not just improvised explosive devices or a tragic HMMWV accident. Work closely with the medical community to conduct educational classes and prepare your Soldiers for all aspects of training and deployments. Don't let a heat casualty happen in your formation. Stay engaged and know what your Soldiers are doing!

*For more information on heat injury prevention, visit the U.S. Army Center for Health Promotion and Preventive Medicine Web site at [chppm-www.apgea.army.mil](http://chppm-www.apgea.army.mil).*

## Work/Rest and Water Consumption Table

These work/rest times and fluid replacement volumes will sustain performance and hydration for at least four hours of work in the specified heat category. Fluid needs can vary based on individual differences ( $\pm \frac{1}{4}$  quart/hour) and exposure to full sun or full shade ( $\pm \frac{1}{4}$  quart/hour).

- NL = no limit to work time per hour
- Rest = minimal physical activity (sitting or standing) accomplished in shade, if possible
- CAUTION: Hourly fluid intake should not exceed  $1\frac{1}{2}$  quarts; daily fluid intake should not exceed 12 quarts
- If wearing body armor, add 5 °F to WBGT index in humid climates
- If doing easy work and wearing nuclear, biological, chemical (MOPP 4) clothing, add 10 °F to WBGT index
- If doing moderate or hard work and wearing MOPP 4 clothing, add 20 °F to WBGT index

Heat Category	WBGT Index, °F	easy work		moderate work		hard work	
		Work/Rest (min)	Water Intake (qt/hr)	Work/Rest (min)	Water Intake (qt/hr)	Work/Rest (min)	Water Intake (qt/hr)
1 WHITE	78°- 81.9°	NL	$\frac{1}{2}$	NL	$\frac{3}{4}$	40/20 min	$\frac{3}{4}$
2 GREEN	82°- 84.9°	NL	$\frac{1}{2}$	50/10 min	$\frac{3}{4}$	30/30 min	1
3 YELLOW	85°- 87.9°	NL	$\frac{3}{4}$	40/20 min	$\frac{3}{4}$	30/30 min	1
4 RED	88°- 89.9°	NL	$\frac{3}{4}$	30/30 min	$\frac{3}{4}$	20/40 min	1
5 BLACK	> 90°	50/10 min	1	20/40 min	1	10/50 min	1

easy

- Weapons maintenance
- Walking, hard surface, at 2.5 mph with < 30-lb load
- Marksmanship training
- Drill and ceremony
- Manual of arms

moderate

- Walking, loose sand, at 2.5 mph, no load
- Walking, hard surface, at 3.5 mph with < 40-lb load
- Calisthenics
- Patrolling
- Individual movement techniques, e.g., low crawl or high crawl
- Defensive position construction

hard

- Walking, hard surface, at 3.5 mph with  $\geq$  40-lb load
- Walking, loose sand, at 2.5 mph with load
- Field assaults